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ABSTRACT

This publication is an annotated bibliography of articles and key organizational sources on Total Quality Management (TQM) in higher education. The list was developed through searches of local and national data bases including Education Resources Information Center (ERIC), Public Affairs Information System (PAIS), Wilson Indexes to Journal Articles; American Business Index (ABI), and the University of Michigan Catalog. The search ultimately yielded 92 articles all published before January 1993. Each is listed with an annotation. The section listing 13 key organizational sources, groups those under: current perspectives (3), "how to" guides (2), and TQM "classics" (8). (JB)

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This annotated bibliography was prepared during 1992-93 as part of the activities of the CSHPE Research Group on TQM in Higher Education.

Other activities currently being undertaken include:

1. Preparation of a Conceptual Framework for TQM in Higher Education.
2. A Study of the Meaning of Quality by Higher Education Professionals.
3. A Pilot Study/Survey of the TQM Culture in Higher Education.
4. Proposal for a large scale study of Quality Culture and TQM Practices in Higher Education.
5. Examination of Quality and TQM in Academic Departments.

TOTAL QUALITY MANAGEMENT IN HIGHER EDUCATION: FROM ASSESSMENT TO IMPROVEMENT

An Annotated Bibliography
Second Edition - January, 1993

TQM IN HIGHER EDUCATION RESEARCH GROUP
CENTER FOR THE STUDY OF HIGHER AND POSTSECONDARY EDUCATION
UNIVERSITY OF MICHIGAN

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I. INTRODUCTION

As the American public has become increasingly critical of the level of quality in our colleges and universities, campus officials have been searching for ways to increase educational quality. One current method utilized to achieve this goal in higher education is Total Quality Management (TQM). The purpose of this annotated bibliography, *Total Quality Management in Higher Education: From Assessment to Improvement*, is to briefly outline the current context for implementing TQM into higher education, to offer researchers access to literature sources that frame the current, applications of TQM to the field of higher education, and to offer suggestions for general readings on TQM to the interested researcher.

In the early 1980's, concerns regarding the quality of education were articulated through national reports such as *A Nation At Risk* (1983) and *Involvement In Learning* (1984). These reports focused on the need for effective learning outcomes and produced a reform movement which strongly emphasized assessment as its core element. During the late 1980's, a shift in emphasis developed in which the focus in higher education evolved from learning outcomes to overall quality or improvement. An interest in the Total Quality Management movement, as it applied to higher education, began to surface approximately five years ago as college and university educators witnessed its impact on industry (1980), services, (1985), government (1987), and hospitals (1988).

Leaders in professional schools and community colleges began to write about the application of Total Quality Management to higher education in 1989 and university leaders followed soon afterward. Just as business and industry recognized the public's demand for improved services and products, higher

education institutions are now acknowledging the need to continually improve the quality of their educational services.

An increasing number of colleges and universities are initiating quality improvement programs. As interest in TQM continues to spread, administrators and faculty have expressed a need for references to educate themselves regarding Total Quality Management principles and practices. *Total Quality Management in Higher Education: From Assessment to Improvement* is a comprehensive annotated bibliography produced by the University of Michigan's Center for the Study of Higher and Postsecondary Education to fulfill this need among campus educators. It provides a summarized compilation of publications describing Total Quality Management as applied to institutions of higher education.

Total Quality Management in Higher Education: From Assessment to Improvement includes articles published before January 1, 1993. These articles were identified through local and national databases including: Education Resources Information Center (ERIC), Public Affairs Information System (PAIS), Wilson Indexes to Journal Articles, American Business Index (ABI), and the University of Michigan Catalog (MCAT). Search terms used included: quality, management, higher and education.

The literature search of Total Quality Management yielded over 500 articles from which we excluded those that were focused on business, government, K-12 schools, or health care. As a result, we have identified 92 articles which are substantially focused on higher education for inclusion in this annotated bibliography. In addition, we have included references for a selection of key organizational sources which detail the principles of Total Quality Management as developed for business and industry.

II. ANNOTATED BIBLIOGRAPHY OF TQM IN HIGHER EDUCATION

1. Academy for Quality in Education. 1991, March. *Quality speaks. Academy for Quality in Education newsletter.* Appleton, WI: Fox Valley Technical College.

   Briefly describes consulting efforts at Hawkeye Inst. of Technology in Waterloo, Iowa; Houston Community College System in Texas; and Lamar Community College in Colorado.

   Provide 20 hours of training for FT employees at Waterloo. First year went well; second year of implementation not as positive. Now there are positive results and a better attitude. Training is a part of orientation.

   At Lamar in Colorado 85% of FT and PT staff have been trained in quality concepts (100% by this Spring). Their Quality Council has faculty involvement, President, quality coordinator, two faculty, two classified workers, two administrators. They have staggered terms and area representatives will be elected after initial term.

   Houston Community College implemented its program division by division with occupational/technical division going first. They have a 30 branch campus with 5 administrative centers and have formed their own Quality Academy.

   FVTC's role in all this is in training/consultation of the personnel involved in these initiatives. Additionally, FVTC is developing a Quality in Instruction curriculum with the goal of continuously improving the instructional process.

2. Ashworth, Kenneth H. 1979. "American higher education in decline." Chapter on "The Potential for Quality Control" in College Station, Texas: Texas A&M University Press.

   Concerned with distinctions between "nontraditional institutions and programs and traditional colleges and universities" and maintaining quality in the field of higher education given the proliferation of "nontraditional institutions". Contends that in assessing quality, the "regional accrediting agencies should be like one of the Supreme Court justices, who said that though he did not always understand art, he could

recognize pornography when he saw it."

3. Axland, S. 1991, October. "Looking for a quality education." *Quality Progress* 61-72.

This is not a comprehensive listing *but* Quality Progress surveyed administrators and faculty members of universities, community colleges, and elementary and secondary schools to find out whether they offer courses in the quality field or whether they are implementing the principles of TQM into their management practices. Contains information in chart form for 78 colleges and universities which lists 1)whether they are implementing TQM in administration; 2)offer TQM courses in management; 3)offer courses in engineering; 4)offer courses in other areas; and 5)offer a minor/concentration.

The listing of 14 community colleges notes if they are 1)implementing TQM in administration; 2)offering TQM management courses; 3)offering TQM technology courses; 4)offering other courses; and 5)offering a degree program. Includes an institutional contact list with names, addresses, and phone numbers. Also lists K-12 schools implementing a total quality improvement process.

4. Bannister, John G. and Phillips, Terri E. 1984. "To validate or not to validate: That is the question." *Journal of Student Financial Aid* 14:6-10.

The computerized financial aid application editing system used at the University of South Carolina to ensure efficient processing and maintain quality control is described. The monitoring system is based on standardized codes derived from national needs assessment services and consists of 10 edit checks and an interface between the admissions and registrar's offices. Journal not available at U-M; this abstract is taken from a "canned" description.

5. Bemowski, K. 1991, October. "Restoring the pillars of higher education." *Quality Progress* 37-42.

This article advocates TQM as a method for institutions to cope with the threats to stability and strength of higher education in the United States today. It uses Graduate Business Administration programs and three additional institutions/systems currently utilizing TQM processes, Fox Valley Technical College, Oregon State University, and North Dakota

University System, as its primary framework for analysis. Bemowski strongly urges that institutions utilize a "practice what you teach" philosophy with TQM. The strength of this article is its focus on the academic perspective of implementing TQM in higher education.

6. Bergquist, W. H. and Armstrong, J. L. 1986. "Planning effectively for educational quality." San Francisco: Jossey-Bass.

Outcome of Kellogg Foundation-sponsored study of planning and ensuring quality in academic programs (The Project on Quality Undergraduate Education, or Project QUE, 1980-1984). Identifies issues of teaching and learning, liberal education, values and ethics education as all intrinsically quality-in-higher-education issues. Study concluded "that we did not learn much about change that was brand new" (p 169). Book presents a "detailed planning model for selecting, designing, testing, and implementing an academic program of highest quality" (p xii).

Operating assumptions of the project, which allowed each of 60 liberal arts colleges to develop "and implement a single academic program, one based on human development principles and student learning outcomes." Ingoing assumptions were three: "the key to the future" is providing high-quality educational services dedicated to the growth and development of the individual student; traditional quantifiable measures of quality still important, but central focus of quality is the educational process, or "what actually happens to promote (and inhibit) the cognitive and affective development of the individual student through the individual program"; and that an institution's general quality is derived from the quality of several distinctive programs (p xiv).

7. Biggs, John B. and Collis, Kevin F. 1982. "Evaluating the quality of learning: The SOLO taxonomy (Structure of the Observed Learning Outcome)." New York: Academic Press.

A qualitative, system-analysis-based method of formative evaluation of the teaching/learning process. In deliberate contrast to Bloom's taxonomy (as well as those suggested by Shroder and Marton), which look upon the learning process in a hierarchically structured framework. While Piagetian stage theory of development provides underpinning to the SOLO taxonomy, authors insist upon a more fluid understanding of SOLO "levels" as non-sequential, varying by content area within a given student or teacher's personality.

From the Preface: "The SOLO Taxonomy is, as far as we are aware, the only instrument available for assessing quality retrospectively in an

objective and systematic way that is also easily understandable by both teacher and student...at the upper-elementary, junior and senior high, and college levels." Offers instruments in various subject disciplines and discusses implications for psychological development and educational theory.

8. Birch, Derek W. and Johnson, F. Craig . "Quality control/assurance in post secondary education: An outcomes approach." *The Annual Forum of the Association for Institutional Research*, Phoenix, AZ, 1988, May 15. Washington, D.C.: ERIC.

A study was conducted using quality control and quality assurance models to examine student outcomes. The purpose was to investigate current quality control and quality assurance practices in six colleges, to evaluate the relationship between quantitative effectiveness measures and qualitative outcomes measures and to assess the readiness of each college to develop its own quality policy. A course data survey and a program review were conducted in each college. The results indicated that the colleges were more ready to make quantitative measurements than they were to use qualitative indicators. The quality control metaphor proved useful in the analysis.
This is a "canned abstract".

9. Bolton, Brian. 1986. "Quality assurance and quality control of a new engineering curriculum." *Assessment and Evaluation in Higher Education* 11:181-191.

An electrical engineering program in which a field experience component is used both to enhance training and to evaluate the program's outcomes is described. The curriculum development process is highlighted. This is a "canned" abstract.

10. Bowsher, Jack E. 1989. *Educating America: Lessons learned in the nation's corporations.* New York: Wiley & Sons.

Written in response to the 1980s concern with the "quality of education", as articulated in Terrel Bell's A Nation at Risk, etc. Bowsher is from a corporate education background (IBM). First 10 of 15 chapters discuss successful employee education within business and industry, and recommendations for future transformations. Chapter 11, Applying lessons learned to primary and secondary education and Chapter 13, Applying lessons learned in business education to Higher Education, are informative.

Cited (Chapter 13) as motivating factors for change are rapidly rising costs and concern with decreasing quality (although the discussion sounds more like the focus is efficiency, not quality). Undertakes also the research/teaching debate and curriculum issues, especially remedial and liberal arts. Strong focus on instructional design techniques and technology; calls for campus standardization to ensure cost-effective use of expensive resources like computing. No particular management or integrative suggestions.

Closing is interesting however. He advocates looking at the various educational systems in this country (from pre-school through adult continuing ed) from the perspective of the individual student: instead of seamed and separate systems, there ought to be some functioning single system addressing the lifelong educational needs of people. "Today the system is very inefficient. Many subjects are repeated because each education level starts to teach at the lowest point of achievement from the previous level" (p 223). Although there is, curiously, no mention of quality management principles, this recommendation is consistent with the Customer/Supplier model and concepts of efficiency which pervade the Quality literature.

11. Burns, H. W. 1985. "A view of standards in postsecondary education." Pp. 79-102 in *Education on trial: Strategies for the future*, W.J. Johnston (ed.). San Francisco, CA: Institute for Contemporary Studies.

Article in a collection compiled in the wake of a number of national commission reports critical of education. The book addresses the serious issues of American education in a "Where do we go from here?" vein. A few of the articles, including this one, focus on postsecondary education. Like a number of education critiques, the article is better at ascribing blame than suggesting solutions. The Burns article espouses a conservative view that the pendulum has swung too far in emphasizing access and eroded quality standards in the process. The Burns answer: simple-tighten standards and improve quality through the admissions process.

12. California Commission on Educational Quality. 1988. *Report to the Governor.* Sacramento, CA: California Commission on Educational Quality.

Although, like Biggs and Collis and Klausmeier, this report is focused on quality measures and improvement measures in K-12 education, it is useful by analogy, specifically in this case by insisting that the key strategy in finding "common-sense" solutions is to "always focus on the students

themselves." This student-centered approach is an exact equivalent of the customer- or client-centered approach which is at the heart of the quality literature in business.

13. Carothers, R. L. 1992. "Trippingly on the tongue: Translating quality for the academy." *AAHE Bulletin* 45(3):6-10.

Addresses the problem of the language and business terminology used to describe total quality management. Recommends that higher education develop its own taxonomy so that "strange words" do not stand in the way of meaningful change. Terms like "customers" could be replaced with "beneficiaries." Carothers asserts that because faculty already agree with many of the quality improvement tenets, they would more likely criticize the content rather than the terminology if TQM were "packaged" differently.

14. Coate, L. E. 1991. ""Implementing total quality management in a university setting."." Pp. pp. 27-38 in *New Directions in Institutional Research*, Editors L. Sherr & G. Lozier. Vol. 71. San Francisco: Jossey-Bass Publishers.

Excellent operational outline of Oregon State University's implementation of total quality management into its administrative operations. Coate is the vice-president for finance and administration at OSU and his account of the implementation process there offers insight into "lessons learned from mistakes, structural changes that evolved from the program, and changes in the behavior and attitude of the participants."

The implementation of TQM at OSU was carried out in nine phases, each of which Coate reviews in detail. During Phase One of this implementation, the decision was made to focus initial efforts on the administrative area of the university for two reasons. The first reason was that the administrative service units more closely matched similar units in industry, offering models from which to work. The second reason was the initial reticence of faculty to consider TQM in the academic area based on concerns relating to autonomy and control.

Based on OSU's experience, Coate outlines six key principles necessary for successful implementation of TQM in a college or university setting: "Support from the top, finding a champion act, teams are everything, breakthrough planning helps, try the service side first." .

15. Collett, C. &. Seymour, D. 1991. *Total quality management in higher education: A critical assessment.* Report No. 91-01 ed. Methuen, MA: GOAL/QPC: .

This report offers a summation of the authors' findings from their survey generating a "current critical assessment of Total Quality Management initiatives in higher education." This survey addressed the areas of personal and institutional experience with TQM, attitude scales designed to measure the seven criteria used in evaluation procedures for the Malcolm Baldridge National Quality Award, and general benefits and frustrations experienced by respondents with TQM on their campuses. A cross-section of institutional types participated, including four year private colleges, four year public colleges, and community colleges. The report is well organized by response areas and offers a solid overview of current attempts to implement TQM on the participating campuses. .

16. Conrad, C. and Pratt, A. M. 1985. "Designing for quality." *Journal of Higher Education* 56:601-622.

Focus of article on institutional and program quality. Discusses renewed emphasis on quality of undergraduate education and movement away from reputational rankings of graduate programs as sole measure of quality.

17. Cornesky, R. A. 1991, May. "Implementing TQM procedures at Edinboro University of Pennsylvania." *U.S. Women Engineer*

This brief article offers a micro view of implementing Total Quality Management principles "to reduce class sizes and concomitantly increase productivity" in the registration process at Edinboro University of Pennsylvania. In case study form, Cornesky analyzes five separate systems identified as inherent in the registration there. He outlines how implementing Deming's Plan-Do-Check-Act process produced annual savings of $500,000 through more efficient instructional allocation of courses. This article is appropriate for anyone specifically interested in TQM applications to the registration process. .

18. Council on Postsecondary Education. 1986. *Educational quality and accreditation: A call for diversity, continuity, and innovation.* Washington, D.C.: Council on Postsecondary Education.

This report was prepared by an editorial advisory panel commissioned by the Council on Postsecondary Accreditation. It is an exhortation for accrediting bodies to require evidence of quality from the institutions under their review. Accrediting communities must "operate on the assumption that the need for continuous improvement is an inherent characteristic of vital educational institutions and programs". Calls for accreditation processes to demand that institutions explicitly state their

objectives, how they plan to achieve them, and how they plan to measure their success.

19. Davis, Judith A. June 1983. "Assuring quality control of clinical education in multiple clinical affiliates." *Annual Meeting of the American Society for Medical Technology*, Los Angeles, CA, June. Washington, DC: ERIC.

A plan was developed to assure equivalency of clinical education among the medical laboratory technician (MLT) programs affiliated with Sandhills Community College. The evaluation was conducted using a multiple regression prediction of graduates' success on the national certifying examinations (in response to approval/certification requirements of external organizations, NAACLS and AMA). The development plan focused on teaching/learning process and monitoring improvements.

20. DeLoughry, Thomas J. 1989. "As the race to internationalize U.S. colleges heats up, concern rises over programs' quality and standards." *Chronicle of Higher Education* 35:A21-22.

Many colleges are expanding their traditional programs to promote exchange of students and faculty members and explore new arrangements with colleges abroad. Some observers say American institutions are moving too fast to meet demands for American-style education and do not adequately oversee operations overseas.

21. Deming, W. 1990, August 25. *A system of profound knowledge for industry, education, and government.* Washington, D.C.: W.E. Deming, 4924 Butterworth Place, 20016.

This piece is noteworthy because a portion of it covers education from a system perspective.

"Management of a system is action based on prediction." "Anybody that goes into negotiation without the avowed aim to defend his rights will defeat his avowed purpose".

Deming mentions education, the schools of a city "including private schools, parochial schools, trade schools, and universities, provide an example of components that ought to work together as a system for education". Have to understand what a system is and its characteristics and to optimize the system need to know theory of variation, theory of knowledge, and psychology. Extrinsic motivation (pay, rewards) is a zero-

defect mentality. "Learning and joy in learning in school are submerged in order to capture top grades" Extrinsic motivation is submission to external forces that neutralize intrinsic motivation." "A system of schools (public schools, private schools, parochial schools, trade schools, universities for example) is not merely pupils, teachers, school boards, board of regents, and parents. It should be, instead, a component in a system of education in which pupils from toddlers on up take joy in learning, free from fear of grades and gold stars, and in which teachers take joy in their work, free from fear of ranking. It would be a system that recognizes differences between pupils and differences between teachers".

Two common mistakes in attempts to improve a process. 1) "to treat as a special cause any outcome, any fault, complaint, mistake, breakdown, accidents, shortage, when actually it comes from common causes" (called tampering). 2) "To attribute to common causes any outcome, any outcome, any fault, complaint, mistake, breakdown, accident, shortage, when it actually came from a special cause"

22. Denton, Jon J. 1987. "Factors influencing quality in teacher education: Program, faculty and productivity." *Meeting of the Texas Association of Colleges for Teacher Education*, 1987, April. Washington, DC: ERIC.

In discussing quality indicators of teacher education programs, three components of teacher education are addressed: the program's content, the faculty, and products of inquiry. Identifies elements of quality, but no methodology for measurement or improvement.

23. Drenth, Pieter J. D. 1987. "Quality control in higher education: The AMOS System." *Higher Education in Europe* 12:23-32.

The philosophy, structure, and operation of a Dutch system for institutional self-evaluation in higher education (AMOS) are described. The system is centrally designed to assist in national resource allocation for higher education, but the feedback is intended primarily for institutions and faculty to use in increasing efficiency and effectiveness.

24. Dwyer, Jr Michael J. 1982. "Quality control/project management: a must for physical plant departments." *Proceedings of the Annual Meeting of the Association of the Physical Plant Administrators of Universities and Colleges in Phoenix, AZ*, Phoenix, AZ, 1982, June 6. Eleven Dupont Circle, Suite 250, Washington, DC 20036: Managing Editor.

Among 21 other papers presented at an annual conference, this one alone undertook subjects of quality control and project management (though not quality management). Citing the pressures of "austere funding", author maintains management must find ways to 1)increase productivity, while at the same time 2)maintaining or improving quality. Also cites changes in the management of projects which had customarily been contracted for with outside vendors--they are more frequently being done internally to save cost, which drives physical plant managers to learn more about complex project management. Suggests ways to adapt quality control principles from manufacturing and Department of Defense standards.

25. Edgeman, Rick L. 1988, September. "Quality, reliability, and productivity education: America's hope for enhanced competitive position." *Innovative Higher Education* 13:21-26.

Recent establishment of degree programs in quality and reliability at several leading American academic institutions provides evidence that quality is making ivory tower in-roads. One critical difference in the orientations of U.S. and Japanese firms is in the shouldering of responsibility for product/service quality and reliability. This is a "canned" description.

26. Education Commission of the States. 1982. "Emerging issues in postsecondary education, 1981." *Higher Education in the States* 8:1-28.

This survey of state policy leaders was distributed to governors' offices, legislators, and educators (including state higher education executives and staff). The response rate was 31%. In 1981, the number one rated educational issue was educational quality. Basic skills and remediation was rated second. For the governors and legislators though, basic skills and remediation were the top issue. Quality was rated number one by the education respondents.

27. Ewell, P. 1991. "Assessment and TQM: In search of convergence." pp. 39-50 in *New Directions in Institutional Research*, Editors L. Sherr & G. Lozier. Vol. 71. San Francisco: Jossey-Bass.

This chapter deals with total quality management in the academic area by linking it with assessment as a mechanism for academic improvement. Ewell supports the linkage of these two processes in three ways: by

demonstrating parallels between the two approaches, by showing how evolving assessment practice is consistent with TQM principles, and by outlining the common obstacles facing both assessment and TQM. His position is well constructed and offers a pragmatic rather than dogmatic overview of implementing TQM in the academic area.

28. Fleischer, Mitchell. 1982. "A national survey of undergraduate practicum programs." *Annual Meeting of the American Psychological Association in Washington, D.C.*, Washington, DC, 1982, August. Washington, DC: ERIC.

Undergraduate practicum programs at 291 departments of psychology were surveyed using a 37-item questionnaire and information obtained from the 1970 census and the American Psychological Association's "Graduate Study in Psychology" (1981). Sixty-five of the departments claimed to have a practicum program. Variety in the practicum programs and little consistency in departmental management or quality control were found. This is a "canned" description.

29. Fox, D. A. "Making their brainpower blossom." (Nashville, TN),
The article describes the efforts of Belmont College's President William Troutt to make Belmont "into a Deming-style organization".

After using the quality improvement process to cut admissions office response time from 14 to 4 days, Belmont founded the "Center for Quality and Professional Development" earlier this year. It is described as "an educational resource geared to assist Nashville-area organizations in their quest of improvement". Susan Hillenmeyer, vice president of the center cautions, "A quality program must begin with the leadership. If top management doesn't lead the introduction to quality, then it's a waste of the employees' time and the company's money". .

30. Fox Valley Technical College. 1990, May. *The Academy for Quality in Education.* Appleton, WI: Fox Valley Technical College.

Fox Valley did not pilot TQM but went for it wholesale with a systems approach (college-wide). Gave everyone training based on an adaptation of Crosby's model. New employees receive 20 hours of training. This piece promotes their efforts and outlines their structure.

31. Fox Valley Technical College. 1989. *Quality first annual report: 1988-89.* Appleton, WI: Fox Valley Technical College.

Developed a 16 step hybrid implementation process. They have a number of "model" committees and approximately 30 "problem solving in the work unit" teams for many departmental areas (i.e. police science). They paid considerable attention to structure, the "how" of "what" they did.

32. Freedman, Leonard. 1987. "Quality in continuing education: Principles, practices and standards for colleges and universities." San Francisco: Jossey-Bass.

Reference to the considerable body of literature on continuing education, where largely the term quality control is used to imply the absence or deficiency of academic standards. Good and thorough discussion of the need for quality control and monitoring in early chapters (esp. Ch. 1), where it occurred to this reader that the challenges to quality of reputation and indeed of substance faced by CHE units sound like early or exaggerated forms of the forces driving moves to quality in traditional HE now.

Interesting item, p 9: discussion of the tension between quality and equality; namely, that institutions who move to improve or assure quality often acquire elitist images.

Urges quality to be undertaken as a topic in defensiveness but in the interests of service and integrity. By selectively omitting or substituting higher for the word continuing, the book reads quite well as a discussion of current quality issues in higher education.

Second half of book outlines procedures and criteria for assessing and maintaining quality in instruction, administration, faculty, organizational structure, and staffing. These include use of accreditation reviews; internal staff reviews by means of regular post hoc and sometimes ongoing formative review committees; involvement of faculty in review processes; representation of all institutional constituencies in review processes; use of and broader sourcing (registration, phone calls, letters) of student evaluations; and developing written standards and guidelines. Regarding the difficult problems of qualitative measurement, nothing enlightening.

Does not use the business quality jargon, but does refer to the "many recent books on excellence in industry" which "provide various, sometimes conflicting accounts of the characteristics of the first-rate organization," and suggests that the one common denominator in all discussions of business quality can and should be adopted in continuing higher education also: "the best institutions are those that are driven by the ethos of service to the consumer."

33. Hanson, Alan L. and Mergener, Michael A. 1983. "Experiential learning: Applications from adult and general education to pharmacy education." *American Journal of Pharmaceutical Education* 47:23-29.

Application of experiences in adult and general education to experiential and prior learning in PharmD program development is discussed. Included in the discussion are definitions, program examples, contrasts with traditional programs, quality control procedures, quality-control, and cost considerations. This is a "canned" description.

34. Hyson, R. J. 1991. "Point seven: Institute leadership." *Applying the Deming method to higher education for more effective human resource management*, Editor R. Miller. Washington, D.C.: The College and University Personnel Association.

Hyson interprets Deming's Point Seven, "Institute Leadership," as advocating that "leaders much first remove all barriers that make it difficult for workers to take pride in their work," and "leaders must know the work they supervise and have the authority to take the necessary actions to enable workers to succeed." He then outlines the application of this interpretation into the higher education contexts of both the Cohen and March "organized anarchy" model and Miller's "dynamic leadership" model. He focuses on the importance of adopting an individual leadership style that includes Deming's Point Seven principles yet fits the needs of a specific type of institution.

Hyson concludes by outlining three leadership priorities that Deming believes must be adapted by higher education leaders in order for them to be effective. These three priorities are: concern with people, a commitment to constant improvement, and management as a holistic process. Hyson's interpretation of Deming's Point Seven is well-constructed and offers a broad application of TQM leadership principles to higher education.

35. Ianneca, S. 1991. *Reducing the cost of trash removal.* Philadelphia, PA: University of Pennsylvania.

Senior management initiated four quality teams in December 1990 after Penn's Senior Vice President and administrative vice presidents participated in a Juran style quality workshop in the Fall. The article describes Penn's efforts to improve four trash removal "sub-processes": 1) university pickup; 2) recycling; 3) contractor pulls of 19 and 40 ton

compactors and 4) wet trash (food grinders and sewage). First step was weighing the compactor pulls at the contractor sites.

Team leader and facilitator trained in methodology and facilitator and team member trained in usage of tools. Details their diagnostic and remedial journey (15 steps); lists team members. Problem was in pulling compactors too frequently. Tried to rig a system for pulls at 80% capacity.

36. Keller, G. 1983. *Academic strategy--The management revolution in American higher education.* Baltimore, MD: John Hopkins University Press.

Keller's book emphasized the "how" of the activities higher education institutions are engaged in. This book was very influential because of its focus on strategic planning. Keller stressed the importance of strategic planning in higher education at a time when it was becoming "old hat" in the corporate world. There may be parallels with the movement of TQM from the corporate world to the higher education sector.

37. _____. 1992, May. "Increasing quality on campus: What should colleges do about the TQM mania?" *Change* pp. 40-45.

This article is a review of Dr. Daniel Seymour's book, *On Q: Causing Quality in Higher Education*, published in 1992 by the Macmillan Publishing Company. Keller sets the context for this review by briefly outlining the history and philosophy of TQM in the United States through the contribution of Walter Shewhart, Joseph Juran, W. Edwards Deming, and Philip Crosby. He then starts his review of the book by stating that, "It is the grand purpose of this book to convince us that TQM is appropriate for colleges too, and he [Seymour] partly succeeds."

Keller's main criticism of the book is that Seymour doesn't go far enough with his arguments for TQM in higher education. One example of this that he gives is Seymour's postulation that customer satisfaction is central to TQM. Keller feels that Seymour is ambiguous in defining customer satisfaction in higher education and doesn't offer "innovative procedures" that would apply specifically to higher education.

The review concludes with Keller expressing skepticism over TQM applications in higher education. This skepticism is based on the many external factors influencing academic quality variables relating to student outcomes that he feels are uncontrollable by higher education. He concludes, "Still, Daniel Seymour's provocative book contends forcefully that higher education's performance can, and should be much better than it is despite its limits in shaping people's achievements."

38. Kimball, F. 1991. *University of Michigan Stores Presentation 1 - Is This You?* Boston, Massachusetts: Kimball Associates.

Kimball is a management consultant hired by the University of Michigan to suggest ways to improve the central stores area in purchasing. Central stores sells and delivers products to departments on campus. While sales have been increasing, so have the numbers of employees. Good record keeping by the U of M allowed Kimball to quantify U of M's stores operations to focus attention on needed improvement areas. The first of several presentations aimed at increasing sales and improving service and efficiency.

39. Klausmeier, Herbert J. 1985. *Developing and institutionalizing a self-improvement capability*, New York: University Press of America.

Although this work is a research report based on K-12 institutions, it may be useful by analogy in measuring the potential effectiveness of ongoing improvement programs in higher education. Its purpose was to discover and describe how schools develop and institutionalize self-improvement capabilities. Specifically, it validated the key importance of 3 improvement foci (instruction, individualized student educational planning, and staff/faculty goal-setting and evaluation processes). Organizationally, most important factor was the formation of a leadership-coordinating group to facilitate strategy implementation. In "District Guidelines" section (pp 167-173), an initiative suggested for school districts echoes language consistent with goals of Quality management and reflective of higher ed need: "It is imperative that we of the School District take the initiative for improvement rather than merely responding to directives of federal education agencies, the state education agency, or other organizations."

40. Lamb, J. A. 1986. "Evidence of quality assessment and control in state budget documents." *Legislative action and assessment: Reason and reality*, K. McGuiness. Washington, D.C.: American Association of State Colleges and Universities.

Lamb requested state budget documents from each state; 42 states submitted the documents for her review. She found that twenty one states are using some form of quality incentive funding in their higher education systems. Sixteen of the twenty-one use a formula approach. The use of enhancement dollars has reduced the emphasis on enrollment and encouraged the achievement of "quality" objectives. She adds that states have not totally eliminated enrollment as a driving force in formula

approaches. She noted ten approaches to quality issues: 1) categorical one-time grants; 2) % of budget total as an incentive pool; 3) designated improvement areas; 4) program review; 5) student testing; 6) competitive grants; 7) other stated outcomes like job placement (esp. for vocational programs); 8) student scholarships; 9) Centers of Excellence; and 10) staffing (awards to attract faculty and Chairs of Excellence).

41. Lawrence, J. K. and Green, K. C. 1980. *A question of quality: The higher education ratings game.*, Washington, D.C: ERIC Clearinghouse on Higher Education.

Quality is based on "more than just format and structure." "With the prediction of enrollment declines and increased financial pressures caused by inflation, the issue of quality has taken on even greater significance for every institution, even those of high repute." "This report is the first step to understanding how quality has been defined in the past. With this foundation the reader will be better able to examine and measure quality indicators at his or her own institution." (all from Foreword)

Discussion of evolution of quality concepts and measurement from academic rankings and resource measurement (and its confusion of quantity with quality). Identifies weaknesses of current systems of quality measurement, including inability to compare institutions on the same plane. Measurements are weak because they are: 1)not tied to program goals and objectives; 2)not varied enough in meaning and matched to the variety of activity within a college or university; and 3)not "value-added" in focus on teaching and learning.

Published in 1980, it predates the significant business literature on quality management, cites significant research of the 70's on reliable indicators of program and institutional quality (including Blackburn and Lingenfelter, 1973). While the primary focus of book is on traditional measures of academic quality, it closes with an interesting and predictive twist of focus. The focus moves to external forces (accreditation, most particularly) influencing institutional measures of quality. Most intriguingly, the authors conclude that the traditional ratings and rankings are of importance internally to academics while accreditation addresses external constituents (primarily students) (pp 42-43), suggesting, of course, multiple dimensions of institutional quality.

A brief section on state program review (pp 47-50) acknowledges recent changes in state role "from passive purveyor to concerned underwriter" and concern with indicators of productivity, costs and adherence to mission. In 1980, issues of efficiency were not as urgent as they have become a decade later.

42. Maasen, P. A. M. 1987. "Quality control in higher education: Internal versus external evaluation." *European Journal of Education* 22:161-170.

Concern about the legitimate role of the government in evaluating higher education institutions has developed as a result of a 1985 Dutch proposal for decentralization that combines a formal national quality control system with increased institutional autonomy through self-regulation. The issues are outlined. This is a "canned" description.

43. Mangan, K. 1992, August 12. "TQM: Colleges embrace the concept of total quality management." *Chronicle of Higher Education* .

The Chronicle of Higher Education reports the significant impact that TQM is making in colleges and universities across the nation Rochester Institute of Technology replaces its departments with six curriculum committees to better meet students needs. Fox Valley Technical College has created a quality improvement council and a Quality Institute which has "worked with about 100 colleges." The report also notes that many are frustrated by the amount to time it takes to implement TQM, but institutions also report "employees felt better about their jobs, students were happier, and the process helped to break down barriers." Most of the colleges involved in TQM are either offering quality courses or using TQM principles in business operations.

44. Marchese, T. 1987. "Assessment update: Third down, ten years to go." *AAHE Bulletin* 40:3-8.

Critical of use of assessment as an accountability measure rather than an avenue for improvement. Says that assessment guarantees nothing by way of improvement, "no more than a thermometer cures a fever". Assessment must be combined with good instruction and a program of improvement to strengthen the educational process. State interest in assessment came from the idea that "quality was a function of learning, that learning should be demonstrated by assessment, and that tests could leverage improvement". Central point: information for information's sake does nothing if not used with a planned approach for improvement.

45. _____. 1992, May. "Getting a handle on TQM." *Change* p. 4.

This one page editorial is an excellent summary of how the TQM "movement" is faring among educators. Ted Marchese, Vice President of

the American Association of Higher Education, has been a leading force in promoting the concepts of Total Quality which include "teamwork, talking with customers, benchmarking, and continuous improvement." Marchese notes that these concepts take "training, discipline and time, but return dividends in morale, efficiency, and public approval.".

46. _____. 1991, November. "TQM reaches the academy." *AAHE Bulletin* 2-9.

This article is a snapshot of 1)the development of TQM with a dozen themes outlined (p. 4-6); 2)objections to TQM's applicability to higher education (p. 6-7); and 3)the current state of TQM in higher education (p. 8-9). Here are the twelve TQM themes identified by Marchese: 1) a focus on quality; 2)customer driven; 3)continuous improvement; 4)making processes work better; 5)extending the mindset; 6)the discipline of information; 7)eliminate rework; 8)teamwork; 9)empowering people; 10)training and recognition; 11)vision; and 12)leadership.

Some oft-heard objections: 1)"students aren't customers"; 2)"we already talk with our students"; 3)"oh, that language"; 4)"it's okay for corporations, but..."; 5)"it's okay for administrators, but..."; 6)"none of this is new... it's just good management"; 7)"here we go with another fad".

He suggests it might have applicability on the academic side, "especially to improving aspects of a department's services and to helping it to a keener sense of who its customers and suppliers are" (p. 7). Also feels that it relates to assessment because of concern with process (p. 7). Excellent summary article. It mentions April 5-8 AAHE conference with TQM focus. Also notes Jim Mingle article in September/October *Change* issue.

47. Marcus, L. R., Leone, E., and Goldberg, E. 1983. *The path to excellence: Quality assurance in higher education*, Vol. No. 1. Washington, D.C.: ASHE/ERIC Series on Higher Education.

Identifies two basic reasons for increasing emphasis on educational quality in the eighties: 1)"the belief that 'quality' institutions can best compete"--for resources, students and faculty in demand fields--"in an atmosphere of declining student enrollment and revenues"; and 2) the demands of society for institutional accountability. (Foreword)

Also describe the definitions of quality as ranging across a spectrum from no-standards relativity (quality exists in every person in the institution) to absolute standards exemplified by a few elite institutions. Their own recommendation is definition and match to mission. Insist as key the internal mission-consensus developed through self-study and self-regulation.

Cite governmental and accreditation-organization influences on defining quality standards; suggests self-study and regulation as more appropriate. Closes with recommendation for ongoing review and study within institutions, a concept that is consistent with the later literature on continuous quality improvement.

48. Maser, J. 1991. *Applying Juran in a university environment: Reducing the cost of mailing at the University of Pennsylvania.* Philadelphia, PA: University of Pennsylvania.

Goal of the project was to reduce mailing costs. Penn's Quality Council in the administrative area consists of the senior vice president and five vice presidents of business services, facilities management, finance, human resources, and public safety. Trained a group of facilitators and team leaders. The senior v.p. joined the first project meeting and explained that the project was experimental.

The group agreed no decisions would be made outside team meetings; all work would be done by the team. They agreed on a meeting format and watched lesson tapes in the meetings. They took the tape ideas and applied them to the ideas on their project.

They focused attention on undergraduate admissions (lgst. mailer) and development and university relations (3rd lgst.). Penn has an electronic mail mgmt. system which records mailing activity for billing purposes. Ended up recommending a presort vendor. Delayed mail by 12 hours to use it and save 2.1 cents per 1st class piece. Goal now is to increase machine readable numbers to get a better discount.

49. Mayhew, Lewis B. 1979. "Surviving the eighties." San Francisco: Jossey-Bass.

An astute analysis of the issues which did in fact most heavily impact higher education in the eighties, i.e., retrenchment in its various forms. Written as a guidebook for university presidents and boards, it is strongly focused, however, on financial strategies which will ensure institutional survival. Issues of quality, teaching and learning, diversity, are not undertaken.

50. Melissaratos, A. and Arondt, C. 1992, April. "TQM can address higher education's ills." *NACUBO Business Officer*.

This article discusses the rising interest in TQM among colleges and universities. Aris Melissarates, general manager of cooperate productivity and quality at Westinghouse Electric Corporation, states that higher education representatives at their TQM seminars has increased from one in 1988 to more than 50 in 1991. He finds it unusual that higher education officials are coming to industry to be taught. The article prepares six steps to successful process improvement: 1) management must commit to improvement, 2) select and scope the process, 3) analyze the current process, 4) design a new process, 5) implement the new process, and 6) manage the improved process. Melissarates and Arondt claim that, "colleges and universities will find this method very helpful in its competition for students, in controlling the spiraling costs of education, and in answering demands for accountability .

51. Meyers, Chet. 1984. "Quality teaching: Who will teach the teachers to teach?" *College Faculty: Adjunct and Non-Traditional Roles. Selected Papers from the Conference on Non-Traditional Interdisciplinary Programs*, Ed James W. Fonseca. George Mason University, Fairfax, VA. Division of Continuing Education, 1983, June 22. Washington, D.C.: ERIC Documents.

Six papers on adjunct and nontraditional college faculty are presented from the George Mason University (Virginia) annual conference on nontraditional interdisciplinary programs. This is a "canned" description.

52. Meyers, M. 1983. "Independent study for adults in non-traditional higher education." *The National Conference on Non-Traditional and Interdisciplinary Programs*, Washington, DC: ERIC.

Quality control as maintenance of integrity of degree programs.

53. Miller, R. I., Ed. 1991. *Applying the Deming method to higher education for more effective human resource management*, Washington, D.C.: College and University Personnel Association.

This edited volume relates each of Deming's 14 points to higher education, with one chapter on each point. Since it takes each point direct from Deming, some points apply to higher education better than others. The book is published by the College and University Press Association and is strongest where Deming addresses human resource issues. Chapters 2, 3, 7, 13, 14, and 15 are best.

The idea that human development (p. 25 using Astin's Talent Development perspective) is higher education's central purpose gives a unifying theme to the book, almost in spite of itself. On the whole, this book is poorly edited and since it makes no effort to substitute "points" more appropriate to higher education, the book does as much to muddy the waters as it does to clear them up.

54. Moser, J. 1991. "Point fourteen: Take action to accomplish the transformation." *Applying the deming method to higher education for more effective human resource management.*, Editor R. Miller. Washington D.C. : The College and University Personnel Association.

Moser comprehensively analyzes Deming's Point Fourteen, "Take Action to Accomplish the Transformation", in a higher education context. This chapter is especially appropriate for anyone who has already studied Deming's principles as they relate to industry and is interested in their application to higher education. Moser outlines the three primary elements of this point, top management involvement, utilizing statistical methods for data analysis, and the Deming Cycle (Plan-Do-Check-Act) in detail. He then further analyzes the four factors advocated by the Deming Cycle, commitment, action, change, and data gathering and concludes that "transformation are difficult, but using the Deming Method can make it easier and possible.".

55. National Governors Association. 1987. *Time for results: The Governors' 1991 report on education.* Washington, D.C.: National Governors Association.

Committee chair John Ashcroft, Governor of Missouri, asserts that assessment and college quality are not incompatible with the research and graduate functions of postsecondary institutions. Governors want a renewed emphasis on quality at the undergraduate level. Six primary recommendations: 1) the mission of each public institution within a state should be clearly defined; 2) the fundamental importance of undergraduate institutions should be reemphasized, especially at institutions with a research/graduate program emphasis; 3) systematic programs of assessment using multiple measures should be implemented at public institutions; 4) states should provide performance incentive funding on a formula basis; 5) public institutions should reaffirm their strong commitment to access for students from all socioeconomic backgrounds; and 6) colleges and universities should collect and utilize information about student outcomes.

This report is a key document in the educational reform movement. Annual progress reports are compiled by the NGA which outline state progress towards these goals. The primary focus of Time for Results is K-

12, although postsecondary educational progress is reviewed annually.

56. Neave, Guy. 1988. "On the cultivation of quality, efficiency and enterprise: An overview of recent trends in higher education in western Europe, 1986-1988." *European Journal of Education* 23:7-23.

European higher education policies that were first developed as an empirical, short term response to financial difficulties at the start of the decade have now assumed a long term strategic character that affects the relationships between government and higher education and between society and higher education.

57. Newman, Frank. 1987. "Choosing quality: Reducing conflict between the state and the university." Denver, CO: Education Commission of the United States.

In the midst of state efforts to improve accountability, Newman suggests the best way for institutions to stay out of the state doghouse is "choose quality". He believes institutions should accept the challenge of quality improvement, demonstrate high quality on terms which the state can accept, and protect their autonomy through a positive approach to the challenge for increased quality.

58. Peterson, M. 1986. "Continuity, challenge, and change: An organizational perspective on planning past and future." *Planning for Higher Education* 14:6-15.

Peterson identified four revolutions that pose serious educational issues/or challenges to most institutions: demographic, educational, telematics, and competitive. p. 13: "This final revolution is one that I fear is only brewing-the competitive one". He noted that institutions may need to "pay more attention to "macro-change" strategies...In the past the planning literature has given only limited attention to change strategies, assuming it was the function of administrators or that changes would occur rationally through budgeting, program review, or program planning. Clearly, broad changes that could occur here involve mission choices, structural and education rearrangements, and behavior change affecting sizable segments....We need to give more thought to such macro-change strategies..." p.14.
Finally, he observed the critical role of leadership in planning along three dimensions: 1) a sense of strategic planning; 2) visionary leadership; and 3) interpretive leadership-seeing and understanding how the new vision affects different segments of the institution" p. 15.

59. Peterson, M., Cameron, K. , Mets L. , Jones, P. , and Ettington, D. 1986. *The organizational context for teaching and learning: A review of the research literature*, Ann Arbor, MI: National Center for Research to Improve Postsecondary Teaching and Learning, University of Michigan.

Overview of the context in which teaching and learning takes place. Conceptual discussion of the distinction between organizational culture and climate.

60. Plice, S. J. 1992, June. "Changing the culture: Implementing TQM in an IT organization." *CAUSE/EFFECT*

This article discusses some of the basic premises of TQM and how it is being implemented in an information technological (IT) division. Plice describes TQM within the framework of "systems thinking" where each element in the system effects the next element. "Total quality management is a structural system for creating organization-wide commitment to implementing a continuous improvement process for more efficiently meeting the needs of customers."

The article also describes how TQM was implemented in the IT division and the progress which has been made. It concludes by asserting that "TQM concepts provide a non-disruptive way for the information technology organization to respond to the changing needs of students, faculty, and staff.".

61. Quality New Jersey. 1991. *Quality New Jersey: Education Focus Group.* Middletown, NJ: Quality New Jersey.

A variety of documents (meeting minutes, agendas, press releases) outlining the activities of the Education Focus Group of Quality New Jersey. The Focus Group was formed to "encourage the application of quality management methods through team efforts focusing on continual improvement of... education...". One activity is to adapt Baldrige criteria to education and government use. Governor supports QNJ's efforts, particularly as it relates to state higher education. Purpose to help New Jersey Commissioner of Education develop higher education quality development projects in the state's Department of Higher Education.

62. Qualtec. 1991, August 26. *Executive Management Total Quality Management Workshop, University of Michigan, August 26-28, 1991.* Palm Beach Gardens, FL: Qualtec.

Outline of Qualtec presentation scheduled for August 26, 1991. The 2 1/2 day workshop will be provided to 18 of U of M's executive managers, including the President and Vice President. Points out that TQM is not a program, but an ongoing form of management. Organizational fit is the key issue. A lot of nice display items which give a "bare-bones" understanding of what TQM is all about - from the Qualtec/Florida Power and Light perspective.

To achieve quality operations, organizations must 1) stabilize the process 2) standardize the process and 3) replicate the process where possible. Four principles of TQM include: 1) Respect for people 2) "Customer" satisfaction (What's the product or service? Who is the customer? What does the customer think? How can we meet the valid "needs" of the customer? 3) Management by fact and 4) PDCA-Plan Do Check Act

Reviews the seven steps for improvement: 1) Reason for improvement, what problem should we address and why? 2) Current situation, determine where we are and establish a goal 3) Analysis, identify root causes of problem, not symptoms 4) Countermeasures , proposed solutions 5) Results, where do you stand relative to your improvement target? 6) Standardization, streamline improvement system 7) future plans, review and address remaining issues.

Differentiates between mission and vision statement. Mission statement is 25-30 words and provides the "underlying purpose or thrust of the organization and its reason for being". Vision statement is the "current crystallization of a result the creator wants to bring into reality". Current reality is the foundation upon which the creative process takes place. Vision statements have 1) a description of a desirable future and 2) a declaration of what the organization needs to care about most in order to reach that future

63. Qualtec. 1991, April. *A proposal for the development and implementation of a quality improvement process for University of Michigan.* Palm Beach Gardens, FL: Qualtec.

Four phases proposed in this implementation plan for U of M. 1) Investigation and planning; 2) Systems and structure development; 3) orientation and training and: 4) Teams development. The linchpin in the organization is the Design Team which will be assisted by Qualtec. U of M needs to determine what type of team to use for its first pilot: 1) lead teams 2) functional teams 3) cross-functional teams 4) task teams (these are selected by management and given a problem). A facilitator role includes communicating, promoting, coordinating, teaching, and

coaching.

64. Qualtec. 1991, February. *Qualtec Team Leader Training Case Study.* Palm Beach Gardens, FL: Qualtec, Inc.

Divided into instructor guidance and case study sections. Case study takes a problem of too many calls and tries to reduce the number of calls per customer at a hypothetical gas company. Proceeds through a seven step process. Outlines the PAL meeting format: Purpose, Agenda, Limit. Every meeting has a quick review of a tool or technique. Places a heavy emphasis on format and process. Provides roles for team members in the process. Asks team to go over meeting groundrules. Need to use flipcharts, review techniques, stick to PAL format, have a recorder for minutes. Follow format, introduce ideas systematically, don't rush, lead people through process, and be yourself.

65. Redmon, T. 1986. "The promise of assessment: Linking indicators to outcomes." Pp. 263-272 in *Legislative action and assessment: Reason and reality*, K. McGuiness. Arlington, VA: American Association of State Colleges and Universities.

Redmon, from the Educational Policy Research section of the Southern Regional Education Board (SREB), discusses three areas of educational reform in which assessment plays a role: 1) providing access to quality undergraduate education; 2) improving teacher education in college and schools; and 3) setting academic standards for secondary vocational education. The SREB Commission on Educational Quality has 50 goals in these three areas; the Commission monitors progress towards these goals on an annual basis

66. Robinson, J., Akers, J. , Artzt, E. , Polling, H., Galvin, R., and Allaire, P. 1991, November. "An open letter: TQM on the campus." *Harvard Business Review* 94-95.

CEO's of American Express Company, IBM, Procter & Gamble, Ford Motor Company, Motorola, and Xerox warn that "academic institutions that are slow to embrace TQM, at best, miss the opportunity to lead change and, at worst, run the risk of becoming less relevant to the business world". p. 94 On p. 95, they encourage higher ed. to learn what businesses are doing to teach their employees; establish a research agenda in TQM; and take inventory of curriculum. Particularly directed at business and engineering schools.

67. Salcedo, Hernando. 1988. "Quality indicators in Venezuelan higher education." *Studies in Educational Evaluation* 14:25-35.

The development and use of quality indicators is a priority need for Venezuelan higher education. A sample of previous research studies concerning major issues related to the efficiency of Venezuelan higher education is summarized. The evaluation of academic achievement and some general considerations related to the use of quality indicators are discussed. This is a "canned" description.

68. Seymour, D. 1992. *On Q: Causing quality in higher education.* New York: American Council on Education, Macmillan Publishing Company.

Seymour is a "quality management consultant to higher education and engineering". Article reports "survey findings from a comprehensive critical assessment in quality management initiatives at twenty two pioneering colleges and universities". He received 83 first-person responses: institutions were selected because of identification with actual experience in implementing TQM". (Preceding quotes from page 10.)

Benefits identified: 1) giving people a voice; 2) less explaining, more listening; 3) cutting down steps: 4) a change in climate; 5) willing to sweat the details; 6) bringing people together; 7) a common language; 8) knowing what we are about; 9) reduced rework and scrap; and 10) declining dollars (p. 10-12). Frustrations include: 1) this takes time; 2) more than lip service required; 3) aversion to change; 4) getting below the surface; 5) real teamwork; and 6) tangible results. Three broad categories of responses to question, "Has it been worth it?": 1)Too early to tell; 2) unconditional yes, either responded a) with zeal or b) with cost-benefit analysis; and 3) conditional yes, there are benefits but can't dismiss frustrations.

69. Seymour, D. T. 1991, November. "TQM on campus: What the pioneers are finding." *AAHE Bulletin* 10-13,18.

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70. Shandler, D. and Brummer, M. 1984. "Managing new programs in a time of declining resources." *College-Board Review* 131:4-6.

Recommendations for program development with reduced resources include maintaining a quality-conscious approach to academic program development: appreciating and exhausting the entire institutional management process; making proactive use of resources; and finding and using the parallels between program planning and career development.

71. Shaw, Bonnie F. 1984. "Quality control in the non-traditional classroom: Adjunct faculty in non-traditional programs." *College Faculty: Adjunct and Non-Traditional Roles. Selected Papers from the Conference on Non-Traditional Interdisciplinary Programs*, Arlington, VA, 1983, June 22. Fairfax, VA: George Mason University.

Six papers on adjunct and nontraditional college faculty are presented from the George Mason University (Virginia) annual conference on nontraditional interdisciplinary programs. Issues of quality concern integrity of instruction and reputation.

72. Sherr, L. A. 1989. *Is there a better way to manage higher education?* Association of Institutional Research, Twenty-Ninth Annual Forum, Baltimore, Maryland.

This address questions the present management system used in higher education and the basic principles upon which administrative practices which have been developed. It proposes that higher education adopt the fourteen management principles developed by W. Edward Deming and briefly describes each one as it relates to colleges and universities.

As one of the pioneer works in applying total quality management principles to higher education, it is an important overview of managerial problems which TQM hope to address.

73. Sherr, L. A. 1990. *Quality in higher education--a verb not a noun.* . Association of Institutional Research, Thirtieth Annual Forum, Louisville, Kentucky.

This edited record of a presentation asserts that quality has three dimensions: design, process, and output. The article focuses on the active dimension of continuous process improvement and examines five factors of process improvement theory: customer focus, systematic approach to operations, human resources development, long-term thinking, and commitment. It also provides a list of the types of higher education consumers and a categorized bibliography for further reading. Although the address was presented to institutional researchers, the content is intended for faculty and administrators in general.

74. Sherr, L. &. Lozier G. 1991. *Total quality management in higher education*, Editors L. Lozier G. Sherr. pp. 3-11. New Directions in Institutional Research 71. San Francisco: Jossey-Bass.

Sherr and Lozier offer a good starting point for anyone in higher education interested in total quality management. This chapter is exceptionally good reading for those whose first reaction to TQM in higher education is automatically negative. It is premised on the authors' statement that, "If we are to accept the notion of **controlled processes**, rather than **controlled personnel**, we are more likely to put aside our bias in order to understand what TQM is and what it can mean for higher education." [emphasis added] Framing TQM as continuous process improvement, the quality dimensions of design, output, and process are outlined in detail. Sherr and Lozier then advocate five key elements of continuous process improvement: honesty, share division, patience, commitment, and TQM Theory. They then further break down TQM Theory into five distinct areas. These areas are Mission and Customer Focus, Systematic Approach to Operations, Vigorous Development of Human Resources, Long-term Thinking, and Commitment.

The article is written in a direct manner and should be required reading for anyone contemplating implementation of total quality management on their campus. .

75. Smith, V. 1987. *In the eye of the beholder: Three presentations from the national conference on assessment in higher education in Denver, Colorado.* Washington, D.C.: ERIC.

Makes the point that a "determination of excellence on high quality in education changes over time and with the values of the person making the determination". She says recent interest in quality is due to need for

consolidation, possibility of contraction, the loss of competitive edge in the international marketplace, and rising higher education costs. In response to accountability demands, most campuses have focused on assessment techniques and instruments rather than discussions of quality criteria. Smith, former director of FIPSE and President Emeritus of Vassar, believes quality is in the eye of the beholder.

76. Southern College of Technology. 1990. *The Center for Quality Excellence.* Marietta, GA: Southern Tech.

Brochure describes Southern Tech's quality centered professional development center. Established as a service to business and industry in quality techniques. Offers training and education to business/industry management and employees. The Center has a "heavyweight" board of directors representing major businesses in Atlanta area. Offer short courses and consulting. They have not provided consulting to higher education institutions (other than work internally).

77. Southern Regional Educational Board. 1987. *A progress report and recommendations on educational improvements in the SREB states: A report to the SREB by its commission for educational quality,* Atlanta, GA: Southern Regional Educational Board.

"Tough talk" about progress toward meeting improvement goals. 1981 SREB 'Need for Quality' report outlined educational quality goals for southern states. 1987 progress report indicates higher education improvement not as dramatic as K-12. One major problem: most of the basic information to "prove" educational reforms are working is not available. Southern states are assessment crazy. Without a new state-by-state student assessment program, SREB states will be compared to other regions on the basis of ACT and SAT results. Minimum standards, performance standards, competency standards, and remediation are the keys to improvement according to SREB.

78. St. John, Edward P. and Sepanik, Ronald. 1982. "A framework for improving the management of financial aid offices." *New Directions for Higher Education (Meeting Student Aid Needs in a Period of Retrenchment)* 57-68 .

Colleges can and should do much to improve the management of financial aid operations by: 1)assessment of office management needs based on the overall campus structural development and 2)good basic

management procedures. This is a "canned" description.

79. Sylwester, D. and Harris, J. 1991, October. *Quality improvement in higher education: An overview.* Knoxville, Tennessee: Center for Assessment Research and Development.

The author's intent with this paper is to comprehensively outline "concepts and methods" of quality improvement that can be applied to higher education. They frame their analysis with their definition of quality in higher education: "Quality is continuously facilitating the improvement of processes for learning, research and service that meet or even exceed the expectations of students and all other customers." They believe that acceptance of this definition requires a new culture within any institution, that "it is not simply a new program being put into place, but rather an entirely new way to view and conduct business." Three keys to successful cultural adjustment are committed presidential leadership, process orientation, and involvement of all personnel.

The list of faculty concerns with total quality improvement that Sylwester and Harris outline is useful in its conciseness. However, they offer little analysis of how these concerns can be addressed. Their outline of processes and systems in total quality improvement is valuable. they discuss techniques, variation, and patterns in significant detail and identify the middle management group of any institutions as an important operational element of implementation.

80. Timar, Thomas B. and Kirp, David L. 1988. *Managing educational excellence*, New York: The Falmer Press.

Because it discusses educational reform and quality movements largely from an organizational perspective, much of what is said here about K-12 excellence and improvement could be generalizable to higher education environments. Book's purpose is to survey the post-Nation at Risk scene in educational reform. Example of higher education-applicable observations include (p 48): "Other manifestations of organizational retreat from unattainable objectives include the displacement of external objectives with more internal procedures; and the equalizing or standardization of outputs, so that outcomes are measured by organizational effort rather than effect on clients. On the simplest level, this means substituting quantity measures for quality."

81. Topper, F. 1991. *Using Juran's quality improvement methodology to ensure timely recovery of sponsored research funding.* Philadelphia, PA: University of Pennsylvania.

Top management in the University of Pennsylvania participated in a two-day retreat to learn about the Juran Quality Trilogy in Fall of 1990. Four teams were selected and provided topics to pilot the Juran method in December 1990. The teams were cross-functional and were designed in part to educate the Quality Council.

The problem the team addressed was that external funders of research projects were not paying research "bills" in a timely manner. The group used e-mail to communicate. The team used Pareto diagrams, flowcharts, and graphs to outline the improvement process. A major need was to redesign a payment invoice to send to funders which clearly stated payment expectations. The team presented its information to managers in the affected areas and tried to overcome potential resistance by detailing/describing causes of failure in the process.

82. TQM in higher education research group. 1991, December. *Total quality management in higher education: From assessment to improvement.* Ann Arbor, MI: Center for the Study of Higher and Postsecondary Education, University of Michigan.

83. Uehling, B. 1987. "Serving too many masters: Changing the accreditation process." *Educational Record* 68:38-41.

Uehling is critical of the accreditation process. She says it has not worked as a guarantee of quality. In her view, the accreditation process is a pass-fail process with roots in the attainment of minimal standards. She proposes a number of ways to reform the accreditation process so it becomes more sensitive to the differences between educational institutions.

84. United States Senate. 1986. *Quality in higher education: Hearing before the subcommittee on education, arts, and humanities of the committee on labor and human resources.* Washington, D.C.: United States Senate.

Thrust of Senate concern is that students are getting federal student aid dollars to attend "shoddy institutions with no real intention of providing quality educational programs". Federal problem: how to protect the taxpayer and educational consumer without having direct authority to do so? Not an easy problem to solve, but federal recognition of accrediting agencies does give the Department of Education some indirect leverage over institutions. For example, after these hearings, Secretary Bennett proposed that accrediting bodies require institutions to implement outcomes assessment measures in order to remain accredited. The

transcript of these hearings is a quick read of Washington's view of the higher education community.

85. University of Michigan Medical Center. 1991. *Quality 101 Course Materials.* Ann Arbor, MI: University of Michigan Medical Center.

Course is an 8 hour course which begins with the question, Why Quality? Initial stage of the course provides the reasons for a quality orientation. Stages of resistance and cycles of increasing support are outlined: awareness, knowledge, implementation, integration. Quality approaches evolved from inspection and prevention to planning and design. There is a stage in the quality process which hinges on the development of internal resources (training design and capability).

What is Quality? UMMC Quality Triangle includes quality planning, quality teams, and quality operations. Quality planning requires goals and quantitative indicators. In establishing indicators, planners must look at the customers and their satisfaction. Quality improvement teams engage in a structured environment and process for improvement. Quality operations center on the Plan, Do, Check, Act cycle (PDCA). Valid requirements are set between you and the customer. 1) What problems exist? 2) What would you like that you are not getting? 3) How well do we serve you with what we now provide?

Structure of Total Quality Process. Process driven by mission and vision statements. Provides examples of quality indicators: referring physicians, patients, those who pay the bills for care, employees and medical staff, and students. This section describes types of teams, purpose, and structure. Details role of team leader and facilitator.

86. University of Michigan Medical Center. 1991, June. *Quality 102 course materials.* Ann Arbor, MI: University of Michigan Medical Center.

One unusual feature of this training is its emphasis on theory and scientific management method; almost a throwback to Fredrick Taylor.

Explains how aggregation may not accurately reflect individual performance. Therefore, an understanding of the principles of variation is important so management does not jump to conclusions. When we measure something, we must define our terms and understand terminology in the same way. Set quality indicators prior to establishing root causes.

The examples used to illustrate Deming's 14 points are hospital

examples.

87. University of Michigan Medical Center. 1991, June. *Quality 103 course training materials.* Ann Arbor, MI: University of Michigan Medical Center.

Course partitioned into Letter to Management, Tools and Techniques, Tampering, Learning Principles, Management Actions for Quality and Cost Effectiveness, and Create a Total Quality Environment.

Letter to Management: Includes management generated Expectations of Management which is a laundry list of general expectations that managers have for themselves.

Tools and Techniques: A capability is what a process will deliver when it is stable. A specification is what you want the process to deliver. Data needs to be collected on the processes we manage so we can learn the capability of the process. What the process will yield is defined only for a stable process. If a process is unstable, one cannot define the capability of the process. Pareto analysis measures frequency of occurrence versus the name of an item (like number of times kids getting up late causes you to be late for work).

Tampering: Making a "guesswork" change to a process without thinking about what needs to happen for successful change in that process. Example: Increase sales goal without changing anything else.

Learning principles: Process in the hands of one person and the process works better. "Those people involved in the process often have the answers which will lead to improvement". Have to look at the entire process for opportunities to improve.

Management Actions for Quality and Cost Effectiveness: Section provides examples of manager/team actions along with examples of tools and techniques and their sources. Explains where tools are appropriate.

Create a Total Quality Environment: Focus on managers but especially on cultures. Explains concept of organizational culture. Companies with high levels of participation are better performers over the long run even though they don't show higher performance initially.

88. University of Michigan Medical Center. 1990, September. *Total quality process plan draft-Unpublished.* Ann Arbor, MI: University of Michigan Medical Center.

This document includes: the organizational structure for total quality; the purpose of the report; a Total Quality Roadmap (p. 10); reasons for improvement; an overview of the process; and the roles of teams and individuals in the process. A glossary is attached on page 33.
There is a short, simple explanation of how a voluntary QIT team would initiate an improvement effort:
"any QIT requires an assigned team leader and a team facilitator. If the opportunity for improvement involves a process which crosses departments and you need the help of others to make changes or you need a facilitator appointed to work with the team, submit your plan through your line management to the appropriate Lead Team. If the proposed project requires institutional coordination, it will be referred to the corporate Lead Team".

Other than organizational structure, the plan feature unique to the Medical Center is the outline of training needs, the Draft Training Roll-out Plan. Very helpful document for the implementation of TQM and interesting in that it looks like they did their "Plan" after the "Do" stage in the PDCA cycle.

89. Webster, D. 1986. *Academic quality rankings of American colleges and universities.* Springfield, IL: Charles C. Thomas, Publishers.

Discusses, thoroughly, previous surveys of the literature on academic quality rankings; makes comparisons of early (pre-1959) with modern quality rankings, showing the similarities and differences between them; looks at organizations that classified colleges, universities, professional schools, or some combination of these, and criteria which these organizations thought reflected academic quality; discusses also the work of organizations that seldom attempted to stratify colleges and universities into levels according to their 'quality' but did, though, publish undifferentiated lists of colleges and universities that they thought 'excelled' most others.

Closes with 7 criteria for an 'ideal' academic quality ranking (which do not, however, focus on process as current quality literature, TQM standards would dictate). Calls, rather vaguely, for quality ranking to be:
1)multidimensional; 2)based on achievements of all faculty, students, alumni--not just outstanding ones; 3)based on per capita rather than aggregate figures; 4)rate against external standards of quality; 5)rank departmental "microclimates" as well as whole departments and schools; 6)consider the contributions of ancillary departments; 7)base 'partly' on what students learn.

90. Weert, E. D. 1990. "A macro-analysis of quality assessment in higher education." *Higher Education* 19:57-72.

In most West European countries a quality control system for higher education is in a process of development. This article examines some general characteristics of the emerging structures, how quality is defined and what impact this definition has on internal evaluation. On the basis of a more substantive conceptualization of the term quality, the current trend of a quality control system in which quality is predominantly defined from one central power center is questioned. Important methodological and substantive weaknesses inherent in this centralist model are discussed. In the final section a shift towards a quality control system is advocated in which other interests and perspectives are taken into account.

Weert prefers a decentralized higher education system like in the United States because the European system he describes is too intrusive and inflexible. Provides a nice counterpoint to the William Bennett school of thought which calls for more federal government intervention in higher education. Such a centralist system might actually place limits on improvement and promote uniform mediocrity, rather than excellence.

91. Whitaker, Gilbert and Associates. 1990, March. *Enhancing quality in an era of resource constraints: Task force on costs in higher education.* (unpublished report): University of Michigan, Ann Arbor.

"Provost Vest charged the Task Force on Costs in Higher Education to understand the key forces influencing the costs of education at the University of Michigan and to make recommendations to constrain and control those forces. We approached this assignment recognizing the many inherent differences between a public university and a private sector organization, but attempted to identify cost management concepts from a variety of settings that would be appropriate and applicable in a university environment....The key component of this new perspective is a simultaneous focus on quality improvement and cost containment. 'Quality' must be transformed from meaning 'more and better of everything' to 'searching relentlessly for means of improvement which reduce costs, are cost neutral or low cost, while maintaining or enhancing the quality." (From the Executive Summary).

Also recommends alteration of the University budgeting and planning processes; in the budget- by growth, not by accretion but by substitution; in planning-by elimination of year-by-year planning and institution of long-range strategic planning.

92. White, J. A. 1990, November. "TQM: It's time, academia!" *EDUCATIONews, Newsletter of the Institute of Electrical and Electronics Engineers* 3(2):pp. 1-6.

This paper is based on an address at the First Annual Symposium on the Role of Academia in U.S. Competitiveness and Total Quality Management. Dr. White, the acting Deputy Director of the National Science Foundation, challenges the traditional standards of quality in engineering education by focusing on student attrition, time required to receive an engineering degree, and the cost of higher education. He suggests that academia should teach courses in TQM, and then practice what it teaches. The article concludes by asserting that institutions will adopt a TQM culture only if "a sufficient level of commitment is applied to the process for a long enough time." The commitment noted refers to both dollars and leadership.

Engineering and science departments will find this article useful as a guide to increasing or developing their quality improvement efforts.

III. ANNOTATED BIBLIOGRAPHY OF KEY ORGANIZATIONAL SOURCES

A. Current Perspective/Overviews

93. Robinson, A., 1990. *Modern Approach to Manufacturing Improvement: The Shingo System.* Cambridge, MA: Productivity Press.

Largely a review of Shigeo Shingo's writing on manufacturing strategies, commonly known as Toyota Production System. A focus is given to zero quality control (ZQC) and single-minute exchange of die (SMED). These concepts are thought to be instrumental in achieving just-in-time (JIT) delivery and economic order quantity (EOQ) of one.

94. Suzak, K. 1987. *The New Manufacturing Challenge: Techniques for Continuous Improvement.* New York: The Free Press.

The emphasis is given on implementing and not on introducing quality concepts. There are lost of pictures and diagrams accompanied by case examples. The underlying principle is the elimination of waste in time a space management through continuous improvement.

95. Walton, M. 1986. *The Deming Method.* NY: Perigee.

After a brief introduction of Deming, his 14 points of quality management are introduced. In the second half of the book, number of case studies are presented where companies have tried to implement Deming principles.

B. "How To" Guides

96. Ciampa, D. 1991. *Total Quality: A User's Guide for Implementation.*, Reading, MA: Addison-Wesley.

Implementation of total quality (TQ) is viewed as an organization development (OD) process. A focus is given to the creation of common value system. Leadership creates common vision and values among the

employees, and employee involvement (EI) facilitates continuos improvement process.

97. Michigan Department of Commerce. 1988. *The Memory Jogger: A Pocket Guide Tools for Continuous Improvement.* Methuen, MA: Goal/OPC.

This little pamphlet (3 1/4" X 5") gives and overview of various problem solving techniques. A brief introduction is made for each technique (i.e. fishbone diagram), followed by a step-by-step instruction on how to collect data and analyze them using the technique. The booklet is good as a "memory jogger" and for someone that has studied the techniques previously.

C. TQM "Classics"

98. Crosby, P.B. 1980. *Quality Is Free: The Art of Making Quality Certain.* N.Y.: Penquin Books.

The book illustrates the key actions necessary in implementing a quality management program. It also discusses how people react to the implementation of quality programs. There are lots of case histories primarily based on author's personal experience. The discussion goes beyond production management and into office management.

99. Deming, W. E. 1986. *Out of the Crisis.* Cambridge, MA: The MIT Press.

First published in the early 80's, the author is keenly aware of the awakening of American industries to quality. He first lays out his fourteen principles of quality management and then discusses what managers must do to implement them. The application of the principles are made both to the manufacturing and service industries. The concept of variance control underlies the discussions throughout the book.

100. Feigenbaum, A. V. 1991. *Total Quality Control.* New York: McGraw Hill.

First published in the 50's, this is the book that coined the term, total quality control (TQC). It contains a comprehensive topics on quality,

ranging from management to engineering to statistical issues. It discusses how to create a total quality system and how to manage it.

101. Garvin, D. A. 1988. *Managing Quality: The Strategic and Competitive Edge.* New York: The Free Press.

The book first reviews strategic frameworks of U.S. company's quality management. It then reviews the literature and develops several dimensions of quality management. These dimensions are applied to a case study of quality in U.S. room air conditioning industry. The comparison of U.S. a Japan's quality practices are made at the national policy level as well as at the factory level.

102. Goldratt, E.M. and Cox, J. 1986. *The Goal: A Process of Ongoing Improvement :Croton-on-Hudson.* NY: North River Press.

This book is written as a novel--one manager's pilgrimage to the discovery of quality management. The story unfolds the meaning of controlling for production bottlenecks. The meaning is counter-intuitive to the managers whose definition of efficiency is machine up-time. Once the production process is controlled for bottlenecks, on-going improvement becomes crucial.

103. Imai, M. 1986. *Kaizen: The Key to Japan's Competitive Success.* New York: Random House.

The author asserts kaizen (continuous improvement) as "the single most important factor" in Japan's manufacturing success. Kaizen is introduced as an "umbrella" concept that subsumes many of the TQM concepts known today. An interesting contrast is made between innovative/discrete changes and kaizen/incremental changes. The author visits most of the quality concepts he lists under the kaizen umbrella in more detail using flow charts, mode and case examples.

104. Tshikawa, K. 1982. *Guide to Quality Control.* Tokyo: Asian Productivity Organization.

First published in the mid-70's, the book offers an overview of most known problem solving and quality control techniques. The discussion is laid out

meticulously and in a very comprehensive way. the content is rather technical and would require some statistical background.

105. Juran, J. M. 1988. *Juran on Planning for Quality*. New York: The Free Press.

Quality planning is viewed as product and process development to meet customers' needs. The book lays out specific planning activities one can to identify customers' needs and translate their needs into product development and design.